



Learning through play: the effectiveness of the TGFU learning model as a new way to children's motor skills

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Abstract: The purpose of this study was to determine the effect of the Teaching Games for Understanding (TGFU) model on manipulative movement at SDN Johar Baru 13 Central Jakarta. This approach encourages active involvement, decision making, and understanding of game tactics that directly hone students' motor skills. The research method used was Quasi Experiment with One Group Pre-test–post-test design. The sample in this study was 32 students who were determined through total sampling techniques. The data collection instrument used an observation rubric used to assess the competence of basic manipulative movement skills in the form of initial and final tests accompanied by aspects assessed in the assessment rubric, namely throwing, catching, hitting, dribbling, and kicking. Data were analyzed using descriptive statistics, the Shapiro-Wilk normality test, and the paired sample t-test. The results of the data study showed that the average pre-test score was 7.719 and increased to 9.125 at the time of the post-test. The paired t-test produced a significance value of 0.004 ($p < 0.05$), which indicated that there was a significant effect after treatment was given. Thus, the learning approach using the TGFU model is achieved in improving students' motor skills, especially in students' manipulative movements in elementary schools. This study supports changes in learning strategies that are carried out repetitively and boringly towards more adaptive and flexible learning in PJOK subjects.

Keywords: (TGFU) Model; students' motor skills; manipulative movement.

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INTRODUCTION

Education is a place for humans to develop their abilities. In general, education will influence the development of human thought patterns so that human talents and skills are trained through education. (Goris et al., 2014). Physical Education, Sports, and Health (PJOK) is a learning activity which is aimed at development physical Ability, physical fitness, Insight about sports, and understanding the importance of maintaining physical health.(Of et al., 2023), this subject helps students understand the basic concepts of sport and build patterned habits in the health sector that can be carried over into everyday life.(Atok Miftachul Hudha, Husamah, 2019). Good physical health will help students carry out daily activities more optimally and prevent various diseases due to a less active lifestyle. (Kumari et al., 2024). PJOK aims to create individuals who are active, healthy and have a balanced lifestyle. (Agus Mulyana et al., 2024)

An important part of the goal of sports education requires accuracy in strategies that can be implemented in learning. In its development, PJOK adapts to more modern technology and learning methods. (Wibowo et al., 2024). Physical education in elementary schools has an important role in developing children's motor skills, including manipulative movements such as throwing, catching, and kicking. However, physical education learning in the field is still often done conventionally and repetitively, so it is less interesting and does not fully develop students' potential, so an appropriate approach is needed, one of which is One of the existing approaches is to use a model or method in a learning approach that is appropriate to the needs, interests of students and the preparation for learning.(Wedi, 2016). The urgency of this research lies in the urgent need for more adaptive, fun, and tactical understanding-based learning innovations, so that students are more active and involved. The approach that begins with being dominated by conventional models by applying the same model repeatedly is considered less effective and boring. Efforts made in PJOK change the model or method in helping the Contextual Teaching and Learning, modifying the model in a more varied direction and being able to actively involve all students.(Mendoza et al., 2024).

A breakthrough innovation effort that is increasingly receiving attention in the world of education is Teaching Games for Understanding (TGfU), a learning strategy that emphasizes understanding game concepts and decision-making in the context of real games. (Campbell et al., 2024). The Teaching Games for Understanding (TGFU) model offers a learning approach that aligns cognitive, affective, and psychomotor aspects.

The novelty of this study lies in the application of the TGFU model in the context of elementary education, especially to develop the manipulative movement skills of lower grade elementary school students. Although TGFU has been widely used at the middle and high school levels in competitive sports, research examining the implementation of this model at the elementary school level is still very limited. Therefore, this study contributes scientifically by exploring the effectiveness of TGFU as an innovative alternative approach in learning PJOK in elementary schools]. Research conducted by Gill, Pizarro, Harvey, & Villar (2017) on uniting the TGfU and Sport Education (SE) learning models to bring to life skills, abilities, interests, encouragement and variations that make students synergize in terms of physical aspects, for example by delivering teaching through instructions in achieving learning plans. (Alifia et al., 2023). Unlike traditional methods that focus more on basic skills first, TGFU starts learning from game situations, then develops skills according to game needs. The TGFU approach provides opportunities for students to closely observe the thinking and decision-making mechanisms required in real games (Jones, 2021).

Students' motor skills, it is recognized that motor development the main thing is essential in advancing specific movement sequences to cope in facing life in physical activity. (Abusleme- Allimant et al., 2023). Motor skills are the foundation for success in completing motor skills, movement is an important part of humans working and protecting themselves from future threats with movement providing experience and growing self-confidence. (Asnaldi et al., 2018). Physical education is needed to develop knowledge and from knowledge students can think in making decisions to carry out movements. (Habibi & Tjaahyo Kuntjoro, 2023). This movement is very important in the motor development of children who have great enthusiasm for moving and exploiting which helps children improve coordination, dexterity, and fine and gross motor skills. (Siddik et al., 2024). Some examples of manipulative movements that are often done include throwing, catching, kicking, hitting, and dribbling the ball. Innovative learning strategies are needed to improve children's motor skills. PJOK provides extensive benefits, from improving physical fitness and motor skills, to forming character and improving mental health which then becomes the basis for developing the desires and abilities needed in effective and sustainable work. (Putri et al., 2024)

The implementation of TGfU in sports learning at school shows its effectiveness in improving children's social interaction and motor skills. The TGFU model also increases students' inspiration and involvement in lessons. Constructivist learning that begins with simple, fun games, students tend to be more motivated to participate actively.

High involvement, the concept is easier for them to digest game and develop skills naturally (Rachman, 2018). TGFU encourages students to understand the strategies, rules and tactics of the game through active playing experiences to achieve students' physical fitness and health levels. (Abbas & Abidin, 2016). TGFU is an effective solution in developing children's motor skills in a more interesting and enjoyable way with a variety of games that have been designed according to learning. One of the main advantages of TGFU is improving Problem Solving and Step Determination in games. This learning also includes differentiated learning by fostering responsibility for their own learning and then gaining skills for their lifelong learning, learning to understand and appreciate the differences that exist in everyone, this is an important part of society. (Sutrisno et al., 2023). In the modern era such as today where progress is developing increasingly rapidly, it requires the younger generation to push themselves in a broader direction, requiring coaching or guidance in the growth of a skilled soul from a more in-depth cognitive and social perspective. (Indy, 2019).

Another novelty of this study is its approach in measuring the effectiveness of TGfU using a motor performance-based evaluation method. Thus, this study provides an understanding of how this strategy can be applied flexibly to support children's motor development in various backgrounds and skill levels. This provides a practical contribution for educators and sports coaches in designing more effective and inclusive learning programs. The gist of this discussion is to further examine the impact of the TGFU model on children's motor work and the development of children's characteristics. The findings of this study are needed to be able to Offer a real role in the advancement of a more contextual, fun, and effective physical learning model, as well as enriching physical education literature with an innovative game-based approach.

MATERIALS AND METHODS

The approach used is quantitative research. Tests are given before and after the experimental group receives treatment using the Teaching Games for Understanding (TGFU) model to observe changes in the student's motor learning process. The analysis of this data research uses a quasi-experimental method with a One-Group Pretest-posttest design for its investigation. The purpose of this study is to find out how learning through games can be an effective choice for honing children's motor skills. The implementation of this research was conducted at SDN Johar Baru 13 Central Jakarta.

The population in this study were students of class 3A SDN Johar Baru 13 with a total of 32 students. The sample used in this study was students of class 3A, all members of the class were used as research samples. The research procedure was carried out in several stages, namely the first Compiling an observation formular for the pre-test and post-test. Second, conducting a pre-test using a monotonous learning model before using the TGFU model. Third, providing treatment in the form of a gross motor learning process using the TGFU model. Fourth, conducting a Post-test using the same instrument to measure the development of skills in honing motor skills after using the TGFU model. Fifth, processing and analyzing data from the pre-test and post-test results. The following is a description of the one-group pretest-posttest research design.

Table 1. Research Design

Pre-test	Treatment	Post-test
O1	X	O2

Information: O1: Pre-test X: Treatment O2 : Post-test .

As explained by Arikunto, this design only uses one experimental group without a comparison group. The difference between O1 and O2 is the effect or influence of the treatment given. (Handayani, 2020). data analysis in this study aims to observe the differences in manipulative motor skills before and after treatment is given. Data analysis techniques refer to Miles and Huberman which include the process of data editing, presentation, and drawing conclusions. (Ulviyani et al., 2023).

The research instrument used to assess the competence of basic manipulative movement skills is in the form of initial and final tests with observations using an analytical assessment rubric accompanied by perspectives that are considered important in the assessment rubric, namely throwing, catching, hitting, dribbling, and kicking. The assessment rubric is compiled based on indicators that contain the abilities to be measured, in determining the indicators that can be observed, basic competencies are used as a reference. (Anisah, 2018).

Table 2 Manipulative movement observation rubric instrument

No	Rated aspect	Observation Indicators
1	Throw	Throwing the ball with good coordination and power
2	Catch	Catch the ball accurately and stably
3	Hit	Hitting the ball with the aid of a tool with accuracy
4	Herding	Dribbling the ball (feet/hands) with good control
5	Kick	Kick the ball at the target with the correct technique

Referring to the indicators for achieving basic competencies, in the implementation of the assessment it is carried out with a score level, namely score 1 is in the Very Poor category, score 2 is in the Poor category, score 3 is in the Sufficient category, score 4 is in the Good category, and score 5 is in the Very Good category. Each basic manipulative movement skill tested has several elements of movement and the total score obtained by adding up all the values of the components. The initial step that is fulfilled is to check the data distribution using the Shapiro-Wilk Test because the sample of the study was only 32 students including a small sample <50, the aim is to ensure whether the data occupies the normality assumption. After that, the paired sample t-test (Paired Sample T-Test) was used to evaluate the difference between the pre-test and post-test scores as a basis for measuring the impact of the treatment. All stages of statistical analysis were carried out with the help of SPSS software version 26.

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RESULTS

This study aims to examine of the Teaching Games for Understanding (TGFU) model on manipulative movements to hone students' motor skills in PJOK learning. This research was conducted with 4 meetings. The first meeting was a pre-test of the learning process using a monotonous learning model, followed by a learning treatment using the TGFU model and ended with a post-test of the learning process after Practicing the TGFU Model. The treatment approach of the Teaching Games for Understanding model can be seen in the following table.

Table 3. Treatment of Teaching Games for Understanding (TGFU) Model Approach

Meeting	Treatment
1	<i>Pre-test</i> , recognizing students' initial abilities in basic manipulative movements
2	Developing basic movements using simple games, basic tactical questions and answers, throwing and catching technique exercises
3	Development of basic movements using simple games, discussion of dribbling and kicking tactics, dribbling and kicking technique exercises.
4	<i>Post-test</i> , knowing the improvement in students' learning outcomes and motor skills.

The results of the descriptive statistical research data for the pre-test and post-test with an observation rubric on basic manipulative movements can be seen in the following table.

Table 4. Descriptive Statistics Pre-test Post-test

Statistics	Pre-test	Post-test
N	32	32
Mean	7,719	9,125
Median	8	9
Std. Deviation	2,3450	2,5996
Range	8	10
Min	5	5
Max	13	15

Based on the table data above, the pre-test and post-test of the Teaching Games For Understanding (TGFU) model for manipulative movement can be presented in the following image:

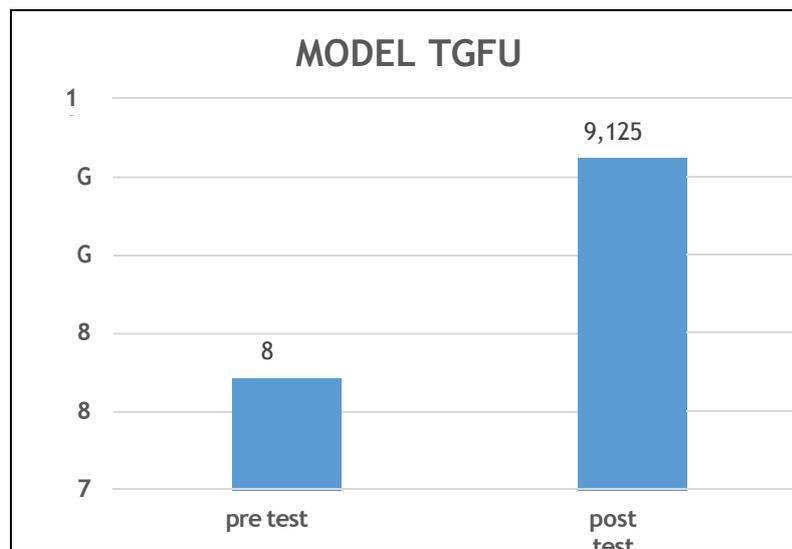


Figure 1. Pre-test Post-test Diagram

Referring to the displayed diagram data, the application of learning shows that approach using the Teaching Games for Understanding model to manipulative movement for grade 3 students shows that there is progress in the average score of the students' pre-test of 7.719 and has increased to 9.125 at the time of the post-test. This shows that after implementing the learning approach using the TGFU model for four meetings, there was a positive development in students' manipulative motor skills. The statistical analysis procedure This research consists of two main stages, namely data normality testing and hypothesis testing or t-test.

Through the help of SPSS software version 26, the Shapiro-Wilk method is used in the initial stage of analysis to test whether the data is normally distributed. This test is important so that the analysis results are more valid, reliable and normal.

Table 5. Normality Test Results

Variables	Sig	information
Pre-test	.713	Normal
Post-test	.079	Normal

Referring to the data the table informs that significance value (p) for the pre- test and post-test is above 0.05, namely a significant value (Sig.) of 0.713 for the Pre-test data and 0.079 for the Post-test data. These results show that the distribution of data in the pre-test and post-test is in the normal category. The truth of the hypothesis that has been formulated must be tested, in this research the data analysis process uses the help of SPSS software version 25. Hypothesis testing uses the Paired Sample T-Test, which aims to examine whether there is a rapid difference, either an increase or a decrease in students' manipulative movements after being given certain treatments. According to (Suwarno et al., 2022) the interpretation criteria are if the significance value <0.05 then Ho is rejected, and Ha is accepted. If the significance value >0.05 then Ho is accepted, and Ho is rejected. To determine whether there is an Achievement of implementation TGFU model on students' manipulative movements, testing is This analysis was performed using the t-statistic test.

Table 6. Paired Sample Test Results Pre-test Post-test

	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Pretest- Posttest	-1,406	2,576	455	-2,335	-0,477	-3,088	32	0.004

Based on the table of paired t-test results above, a significant number (2-tailed) of 0.004 was obtained, which is smaller than 0.05, so the null hypothesis (Ho) is rejected and the alternative hypothesis (Ha) is accepted. These results indicate that the scores of manipulative movements before and after the TGFU model treatment are significantly different. Based on this statistical analysis, it can be stated that the Teaching Games for Understanding model is

significantly effective in improving children's motor skills in manipulative movements of grade 3 students at SDN Johar Baru 13 Central Jakarta.

DISCUSSION

This study shows that the approach by realizing the TGFU model has a significant impact on improving the honing of manipulative motor skills of grade 3 students of SDN Johar Baru 13 Central Jakarta. The average pre-test score of 7.719 increased to 9.125 at the time of the post- test after the implementation of the TGFU model for four meetings. The increase in the average score shows a difference in student abilities before and after treatment, which means that the approach using the GFU model contributes to students' abilities in carrying out manipulative movement activities such as throwing, catching, hitting, dribbling and kicking. This is in line with research that states the TGFU Model is effective. Creating authentic learning experiences, assessing student understanding and performance effectively (Indik Syahrabanu, 2023). TGFU with various stages makes an effective model in learning that is structured by covering humanity, materials, facilities and procedures that are focused on improving students' attitudes that are good at adapting to the diversity and ability of students to complete the devices that have been planned in learning. (Turmuzi et al., 2021).

The Teaching Games for Understanding (TGFU) model in this modern era provides students with the opportunity to actively participate in the learning process through modified games designed to develop students' tactical understanding. The strategic approach is an approach that provides strategy and skills within the framework of sports games. (Rokhayati, 2016). This game is to focus students' attention on the idea of playing through the application of careful procedures in line with the problems and situations in the game. (Yudiana, 2015)

This TGFU learning model can be adjusted to the child's abilities and provides development to social and emotional. This model invites students to actively contribute to it, not only Acceptance and Inspection or instructions from the teacher, with participation in it, students can determine their progress in sports learning. (Pratiwi, 2020).

In terms of developing social skills, TGFU encourages teamwork, communication, and sportsmanship. The main thing that helps develop skills in working together is obeying the rules, helping friends who have not mastered the game, having the determination so that all friends are able to play, working hard, coordinating with fellow colleagues while respecting differences.

Playing by controlling emotions, so by implementing this concept the team will collaborate well to achieve optimal goals.(Amicetya et al., 2023). Good cooperation in PJOK can Improve students' ability to complete games efficiently. (Nuraini et al., 2024). Research Findings confirm that the learning approach using the TGFU model not only influences increasing students' motor skills but also supports in overcoming existing problems such as the availability of adequate sports facilities. This TGFU model can adapt to developments in the era of technology and social revolution. (Basuki, 2022), TGFU can transform the game by adjusting conditions such as available resources and still paying attention to student needs so as not to affect minimizing understanding and meaningful experiences for students. In addition to helping teachers take their roles well and providing progress to students, the role of teachers in TGFU delivering positive responses in a concrete and objective manner can try to foster student interest in participating so that teachers can understand students both in terms of readiness, incompetence and the reasons for all of that will make it easier for teachers to carry out their obligations well(Ali, 2023).

The most important advantage This study shows application of a learning approach that focuses on students' motor development, especially at the 3rd grade Elementary School level. Skills in applying motor movements, especially basic manipulative movement skills, are important because the following activities are segments of the basic skills that students must have in PJOK learning. Research Data analysis prove that improvements in basic manipulative movement skills can be achieved with effective learning strategies and adjusting to the needs and abilities of students. The use of quasi-experimental methods with a pre-test post-test model provides strong data on the effectiveness of the treatment. The t-test showing significance <0.05 proves that learning using the TGFU model has a real effect on increasing students' basic manipulative motor skills

CONCLUSION

The results of this study state that the TGFU approach that is realized in the basic manipulative movement learning process in class 3 of SDN Johar Baru 13 Central Jakarta create a positive impact on improving students' motor skills. The Progression of scores from pre-test to post-test indicates that the learning approach that is adjusted to the abilities of each student can increase the effectiveness of honing students' motor skills in PJOK learning. Through the TGFU model that is implied using simple games that vary according to the availability of facilities, needs and readiness of students.

The Teaching Games for Understanding (TGFU) approach is proven to be effective in developing students' motor skills through learning basic manipulative movements such as throwing, catching, kicking, dribbling, and hitting. By placing students in meaningful game situations, this approach encourages active involvement, decision-making, and understanding of game tactics that directly hone students' motor skills. In addition, TGFU creates a fun and challenging learning atmosphere, which ultimately increases students' motivation and participation in physical activities. Therefore, the application of the TGFU approach is worthy of being integrated into PJOK learning as a strategy that not only hones motor skills but also develops students' cognitive and affective aspects holistically.

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REFERENCE

- Abbas, S., & Abidin, Z. (2016). Comparison of the Effectiveness of the TGFU Learning Model and Fifth Grade Students in Sports Subjects at SDN 01 Lubuk Alung Padang Pariaman. *Menssana Journal*, 1(1), 1–14.
- Abusleme-Allimant, R., Hurtado-Almonacid, J., Reyes-Amigo, T., Yañez-Sepulveda, R., Cortés-Roco, G., Arroyo-Jofre, P., & Paéz-Herrera, J. (2023). Effects of Structured and Unstructured Physical Activity on Gross Motor Skills in Preschool Students to Promote Sustainability in the Physical Education Classroom. *Sustainability (Switzerland)*, 15(13). <https://doi.org/10.3390/su151310167>
- Agus Mulyana, Dela Lestari, Dhilla Pratiwi, Nabila Mufidah Rohmah, Nabila Tri, Neng Nisa Audina Agustina, & Salma Hefty. (2024). Cultivating a Healthy Lifestyle from an Early Age Through Physical Education, Sports, and Health. *Indonesian Education Star Journal*, 2(2), 321–333. <https://doi.org/10.55606/jubpi.v2i2.2998>
- Ali, M. (2023). Efforts to Improve Student Learning Outcomes in Physical Education Subjects Through the Teaching Games for Understanding (TGFU) Learning Model for Class XI IPA.1 Students of MAN 1 Padang City. *Journal of Education and Counseling (JPDK)*, 5(3), 344–349.
- Alifia, E., Muhammad, HN, & Hidayat, T. (2023). Application of TGT (Teams Games Tournament) and TGfU (Teaching Games for Understanding) Learning Models to Learning Motivation in Physical Fitness Skills Material. *EduInovasi: Journal of Basic Educational Studies*, 4(1), 745–761. <https://doi.org/10.47467/edui.v4i1.6019>
- Amicetya, DS, Kahri, M., Warni, H., & Mashud, M. (2023). The Influence of Cooperative Learning on Improving Student Cooperation in Elementary Schools. *Journal of Sports Science*,

- 6(1), 1. <https://doi.org/10.26418/jilo.v6i1.60161>
- Anisah, G. (2018). Validity of the Integrated Character Education Short Story Writing Assessment Instrument. *Journal of Islamic Education*, 3(1), 15–25.
- Asnaldi, A., Zulman, Z., & M, M. (2018). The Relationship between Sports Motivation and Motor Skills with the Learning Outcomes of Sports Education in Padang Pariaman Regency. *Menssana Journal*, 3(2), 16–27.
- Atok Miftachul Hudha, Husamah, AR (2019). ENVIRONMENTAL ETHICS (Theory and Practice of Learning). Member of APPTI (Association of Indonesian Higher Education Publishers), Member of IKAPI (Association of Indonesian Publishers) University of Muhammadiyah Malang.
- Basuki. (2022). Creative learning model for physical education, sports and health teachers.
- Campbell, M., Parata, N., Eastwood, C., Hapeta, J., Campbell, M., Parata, N., Eastwood, C., & Hapeta, J. (2024). 24: networks. *Cambell, Marcus Prata Nick*, October, 24–41. <https://doi.org/https://doi.org/10.34074/junc.24025>
- Goris, J., Jalink, M.B., & ten Cate Hoedemaker, H.O. (2014). Training basic laparoscopic skills using a custom-made video game. *Perspectives on Medical Education*, 3(4), 314–318. <https://doi.org/10.1007/s40037-013-0106-8>
- Habibi, SM, & Tjaahyo Kuntjoro, BF (2023). Development of Basic Locomotor Jumping Movement Learning Model for Improving Frog Jumping Games at Sdn V 147 Kapasan Surabaya. *Riyadhoh: Journal of Sports Education*, 6(1), 149. <https://doi.org/10.31602/rjpo.v6i1.11497>
- Handayani, P. (2020). Application of L-Bato Technique to Improve Opinion Text Writing Skills in Grade XII High School Students. *Journal of Teachers of Education and Special Education*, 2(1), 66–77. <https://doi.org/10.47239/jgdd.v2i1.45>
- Indik Syahrabanu, RP (2023). Literature Exploration on the implementation of the teaching games for understanding (TGFU) model in basketball learning in high schools. *Jurnal Dunia Pendidikan*, 3 (November), 67–78. <http://jurnal.stokbinaguna.ac.id/index.php/JURDIP/article/view/2083>
- Indy, R. (2019). The Role of Education in the Process of Social Change in Tumulung Village, Kauditan District, North Minahasa Regency. *HOLISTIK, Journal of Social and Culture*, 12(4), 1–18. <https://ejournal.unsrat.ac.id/index.php/holistik/article/view/25466>
- Kumari, R., Nath, B., Singh, Y., & Mallick, R. (2024). Health-related physical fitness, physical activity and its correlates among school going adolescents in hilly state in north India: a cross-sectional survey. *BMC Public Health*, 24(1), 1–13. <https://doi.org/10.1186/s12889-024-17808-3>
- Mendoza, S., Sa´nchez-adame, L.M., Urquiza-ylescascas, J.F., Gonza´lez-beltra´n, B.A., & Decouchant, D. (2024). *Learning Process*. 1–21. <https://doi.org/http://doi.org/10.3390/s22155532>
- Nuraini, AS, Annisa, H., Rahmayanti, I., Ayuni, LQ, Makiyyah, NZN, Aprilianti, SN, & Mulyana, A. (2024). Integration of Character Values in Physical Education, Sports, and Health (PJOK) Learning at Elementary School Level. *Mutiara: Journal of Research and Scientific Work*, 2(3), 80–94. <https://doi.org/https://doi.org/10.59059/mutiara.v2i3.1329>
- Of, G., Development, P., & Lifestyle, A.H. (2023). *EURASIAN JOURNAL OF MEDICAL AND GUARANTEE OF PHYSICAL DEVELOPMENT AND*. 3(2), 209–213.
- Pratiwi, E. (2020). *Physical Education Learning Strategy Textbook (Teacher's Guidelines for Teaching Physical Education)*. In Bening Media Publishin. [https://books.google.com/books?hl=en&lr=&id=CnweEAAAQBAJ&oi=fnd&pg=PA177&q=learning+strategi&ots=VSIIin9v1e&sig=7rZ6aPutri, AA, Ridhwan, ASN, Zahra, FR, Handayani, NA, Maharani, NF, Rahmadini, R., & Mulyana, A. \(2024\). Cultivating Interest and Sports Skills through Physical Education Learning in](https://books.google.com/books?hl=en&lr=&id=CnweEAAAQBAJ&oi=fnd&pg=PA177&q=learning+strategi&ots=VSIIin9v1e&sig=7rZ6aPutri, AA, Ridhwan, ASN, Zahra, FR, Handayani, NA, Maharani, NF, Rahmadini, R., & Mulyana, A. (2024). Cultivating Interest and Sports Skills through Physical Education Learning in)

- Elementary Schools. *Indo-MathEdu Intellectuals Journal*, 5(3), 2750–2762.
<https://doi.org/10.54373/imeij.v5i3.1161>
- Rachman, T. (2018). Improving Forward Roll Learning Skills Through the Tgfu (Teaching Games for Understanding) Learning Model. *Angewandte Chemie International Edition*, 6(11), 951–952., 10–27.
- Rokhayati, A. (2016). Implementation of Tactical Approach in Physical Education Learning on Motivation, Physical Fitness and Motor Skills. *Journal of Physical Education and Sports*, 1(2), 57. <https://doi.org/10.17509/jpjo.v1i2.5664>
- Siddik, F., Fadillah, S., Pos, MP, Azzahrawani, F., & Medan, UN (2024). IMPROVING GROSS MOTOR SKILLS OF PRIMARY SCHOOL CHILDREN. November, 8813–8821.
- Sutrisno, LT, Muhtar, T., & Herlambang, YT (2023). The Effectiveness of Differentiated Learning as an Approach to Independence. *DWIJA CENDEKIA: Journal of Pedagogical Research*, 7(2). <https://doi.org/10.20961/jdc.v7i2.76475>
- Suwarno, Mustaji, & Suhari. (2022). The Influence of Learning in Discovery Learning Networks and Learning Styles on English Learning Outcomes of Grade XI Students at SMA Negeri 1 Karang, Trenggalek Regency. *Journal of Education: Research and Conceptual*, 6(4), 712. https://doi.org/10.28926/riset_konseptual.v6i4.605
- Turmuzi, F., Purnamaningsih, IR, Kusuma, A., & R., Y. (2021). Teaching Games for Understanding in improving volleyball upper pass skills. *Patriot Journal*, 3(March), 71–81. <https://doi.org/10.24036/patriot.v>
- Ulviyani, R., Widiastuti, KK, & Zulfiati, HM (2023). Tri N Teachings to Develop Students' Creativity in Social Studies Learning. *Indonesian PGSD Journal*, 09 (December). <http://journal.upy.ac.id/index.php/JPI/article/view/4992>
<http://journal.upy.ac.id/index.php/JPI/article/view/4992/3527>
- Wedi, A. (2016). Concept and Problems of Implementing Learning Methods: Efforts to Improve Learning Quality Through Theoretical-Practical Consistency in Using Learning Methods. *Edcomtech: Journal of Educational Technology Studies*, 1(1), 21–28. <http://journal2.um.ac.id/index.php/edcomtech/article/viewFile/1785/1027>
- Wibowo, JT, Kristina, PC, & Handayani, W. (2024). Analysis of Students' Preferences and Needs for PJOK E-Module Development. 3(July), 616–628.
- Yudiana, Y. (2015). Implementation of Tactical and Technical Approach Model in Volleyball Game Learning in Junior High School Students' Physical Education. *Journal of Educational Studies*, 5(1), 95–11